

CAA112(r) and EPCRA INSPECTION REPORT

Name: Coffeyville Resources Nitrogen Fertilizers, LLC	
Address: 701 East Martin Street Coffeyville, KS 67337	Date of Inspection: December 7-11, 2015
County: Montgomery	Case No: 16KS1207
Phone: 620-252-1900	RMP No: 1000 0016 3048
High Risk: Yes	FRS No: 1100 0057 9856
CAA Title V: Yes	Program Level: Program 3
Process: Nitrogenous Fertilizer Manufacturing	

SUMMARY OF OBSERVATIONS

A review of the Coffeyville Resources Nitrogen Fertilizers, LLC documents and facility revealed the following deficiencies:

1. **Coffeyville Resources Nitrogen Fertilizers, LLC failed to review and update the offsite consequence analyses at least once every 5 years per 40 CFR 68.36. Specifically, failure to update population estimates to 2010 census numbers for the toxic ACS and Flammable WCS & ACS and document evaluation of potential environmental receptors.**
2. **Resources Nitrogen Fertilizers, LLC failed to compile current written process safety information per 40 CFR 68.65(a), specifically the PSI standard, document 0014b, references an obsolete electrical classification diagram and the RAGAGEP documentation letter, document 0026, does not include all methods and standards used to ensure that all plant equipment complies with RAGAGEP.**
3. **Coffeyville Resources Nitrogen Fertilizers, LLC failed to comply with recognized and generally accepted good engineering practices per 40 CFR 68.65(d)(2), specifically anhydrous ammonia piping lacked labeling and color coding, storage vessels lacked signage designating "inhalation hazard," vessels lacked vehicular barriers, and pressure relief valves are not replaced or rebuilt every five years.**
4. **Coffeyville Resources Nitrogen Fertilizers, LLC failed to address emergency operations in the standard operating procedures per 40 CFR 68.69(a)(1)(v) for the UAN plant.**
5. **Coffeyville Resources Nitrogen Fertilizers, LLC failed to perform inspections and tests on process equipment consistent with good engineering practices per 40 CFR 68.73(d)(3), specifically the pressure relief valves are replaced every six years rather than the required five years as specified in industry standard ANSI/CGA G-2.1-2014.**

6. Coffeyville Resources Nitrogen Fertilizers, LLC failed to have at least one person knowledgeable in the process conduct the January 2014 compliance audit per 40 CFR 68.79(b).
7. Coffeyville Resources Nitrogen Fertilizers, LLC failed to review investigation findings with affected contractors per 40 CFR 68.81(f).
8. Coffeyville Resources Nitrogen Fertilizers, LLC failed to require contractors to document employee I.D., date of training, and means to verify training was understood per 40 CFR 68.87(c)(3).
9. Coffeyville Resources Nitrogen Fertilizers, LLC failed to include documentation of proper first-aid and emergency medical treatment necessary to treat accidental human exposures in the emergency response plan per 40 CFR 68.95(a)(1)(ii).

INTRODUCTION

The U.S. Environmental Protection Agency (EPA), Region VII, conducted an RMP inspection of the Coffeyville Resources Nitrogen Fertilizers, LLC (CRNF) located in Coffeyville, Kansas on December 7 through 11, 2015. The following inspectors participated:

- Amber Whisnant, (Lead) EPA Region 7
- George Hess, EPA Region 7
- Jim Ford, NOWCC employee representing EPA
- David Browning, NOWCC employee representing EPA

Whisnant and Hess arranged for the inspection by calling Mr. Neal Barkley on December 4, 2015. Whisnant sent an email to Barkley that same day with a Program 3 checklist attached. The email also outlined documents inspectors would be reviewing. During the phone call with Barkley and in the notification email, Whisnant requested for Monday afternoon an overview of the whole facility, followed by a review of the Compliance Audits, OSHA 300 logs going back 5 years, and any Incident Reports involving RMP chemicals going back 5 years. We asked that employees be notified of the inspection and informed they are allowed to participate in the physical inspection. During the December 10, 2015 site tour, the control room shift supervisor stated that they were notified verbally of our visit, and the shift supervisor told employees during the morning safety briefing.

CRNF was selected for inspection because the facility is considered a Clean Air Act 112r High Risk facility and for having an incident in 2014. We conducted the inspection to determine if the facility complies with Section 112(r) of the Clean Air Act (CAA), as amended in 1990. The inspection also included reporting provisions of the Emergency Planning and Community Right to Know Act (EPCRA) and the release reporting provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

EPA's regulations describing how these laws are to be implemented are found in the Code of Federal Regulations, Title 40, Part 68 (CAA), 355, 370, and 372 (EPCRA). The law and the implementing regulations 40 CFR 68, Chemical Accident Prevention Program (CAPP) require that the facilities must submit a complete Risk Management Plan (RMP) to the EPA for those regulated chemicals they process in amounts above the applicable threshold quantities after June 21, 1999 and to implement the program described in the RMP.

All attachments mentioned in this inspection report are also in a folder on the accompanying DVD. Attachments may not contain all documents or parts of documents collected at the time of the inspection, however the accompanying folder on the DVD will have the complete document(s). The DVD itself is Attachment O and contains a copy of this inspection report, the original documents obtained, photographs taken during the inspection, the RMP current at the time of the inspection, emails between CRNF and the compliance inspector, checklists, and completed forms.

HISTORY OF BUSINESS

CRNF is located at 701 East Martin Street in Coffeyville, Kansas. The city of Coffeyville has a population of approximately 10,000 persons. CRNF is a wholly-owned subsidiary of CVR Partners and owns and operates the nitrogen fertilizer plant. CVR Partners is the fertilizer business based in Sugarland, Texas. CVR Energy is the parent company which is also based in Sugarland, Texas.

The plant produces ammonia and urea ammonium nitrate (UAN) fertilizer. According to the CVR Energy website, the CRNF plant produced 388,900 tons of ammonia (28,300 net tons of the 388,900 tons of ammonia were available for sale) and 963,700 tons of UAN in 2014. Most ammonia facilities use natural gas as a raw product but CRNF uses a petroleum coke gasification process to make hydrogen in their process.

The facility has six separate processes listed on their RMP (Attachment A-6). For purposes of the RMP inspection the only processes evaluated in detail were the Urea Unit, Pressurized Ammonia Bullet Tanks, and Atmospheric Ammonia Storage Tank. Due to resource and time constraints, not all six processes could be evaluated. The Pressurized Ammonia Bullet Tanks and Atmospheric Ammonia Storage Tank processes were selected because they are used in calculating the toxic worst case and alternative case scenarios. The Urea Unit was selected because it was the location of the 2014 incident.

Process ID	Process	Chemicals	Quantity (lbs)	Flam/ Toxic
1000043752	Selexol Unit	Flammable Mixture	58,757	Flammable
		Hydrogen Sulfide	804	Toxic
		Anhydrous Ammonia	102,480	Toxic
1000043754	Urea Unit	Anhydrous Ammonia	59,400	Toxic
1000043756	Press NH3 Bullet Tanks	Anhydrous Ammonia	1,200,000	Toxic
1000043755	Atm Ammonia Storage Tank	Anhydrous Ammonia	40,000,000	Toxic
1000043753	Ammonia Unit	Anhydrous Ammonia	209,700	Toxic
1000043757	Ammonium Nitrate (Area 12)	Anhydrous Ammonia	70,500	Toxic

The facility operates 24 hours per day, 7 days per week. Shifts vary by job function but mostly there are two shifts of 12 hours. There were approximately 130 employees at the time of the inspection.

Attachment A-5 contains the information required by Annex C of EPA 550-K-11-001 (Guidance for Conducting RMP Inspections) that is not contained in this report. The photographs in this attachment are aerial views of the facility and the surrounding countryside/proximity to town. They were taken from the Google Earth Pro.

PERSONS INTERVIEWED AND INDIVIDUAL RESPONSIBILITIES

Neal E. Barkley, P.E.....	Vice President & Fertilizer Facility Manager
Janice Develasco (phone)	Vice President EH&S, CVR Energy
Ron McGill.....	Health/Safety Manager
Dennis D. Irwin.....	Process Safety Management Manager
Joshua S. Warner.....	Safety Specialist Technician/ERT
Jerry Bennett	Emergency Response and Training Supervisor
Don Sloan.....	Operations Coordinator
Robert Beaver.....	Operations Trainer
Christie Mayfield.....	Securitas Security, Security Specialist

OPENING CONFERENCE

The five day RMP inspection began on Monday, December 7, 2015 at 12:50 pm and ended at 3:20 pm on Friday, December 11, 2015. The site tour was conducted on December 10, 2015 from 10:00 am to 12:30 pm. The emergency response section site tour was conducted on December 8, 2015. The team spent approximately 36 hours onsite.

Upon arrival at the facility, the inspectors checked in at the security desk and were escorted to a conference table set up in the back of the classroom area. Inspectors presented their credentials and Whisnant explained the purpose of the visit.

Whisnant began the inspection by outlining the process, discussing the logistics of planning for the week, and scheduling employees to answer questions. Whisnant explained that the team would be requesting copies of documents to scan for review. Those documents would be listed on a signed receipt along with any photographs taken during a tour of the facility. Photos are in Folder N on the DVD. Whisnant requested that the facility identify any Confidential Business Information (CBI) when providing the documents. Neal Barkley, Plant Manager, informed the inspectors that all documents were being claimed as CBI at the time of the inspection until their attorneys had a chance to review all documents taken. Based on this information, Whisnant scanned all documents to an encrypted thumb drive during the inspection.

EPA Inspectors, EPA legal, and CRNF personnel worked out a process for the flow of documents requested. A document was requested by adding it to a spreadsheet. CRNF provided the document to the inspector and if the inspector wanted to scan it, CRNF would bates stamp each page, put a cover sheet on it, and bring it back to Whisnant to scan to the encrypted thumb drive. Each document was given a document number. Each page was marked confidential business information. Please see the closing conference section of this report. At the time of the completion of this report, the claim of CBI for some of the documents was released by CRNF. Please see EPA RMP case file for current CBI status of particular documents.

Whisnant reviewed the individual inspection forms and stated that the facility would receive a copy of the completed and signed forms during the closing conference. Barkley signed the Notice of Inspection (Attachment A-1) stating the purpose of the inspection is to determine compliance with the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 and the Clean Air Act (CAA) of 1990 Section 112r. Whisnant explained that at the completion of the inspection, she would conduct a closing conference to summarize any preliminary findings and have some completed forms, including the document receipt, which would require a signature acknowledging receipt. Whisnant told staff that additional findings could result from a post inspection review of the documents once a more thorough review of the documents took place. She completed the multimedia screening checklist with input from Barkley and other facility staff.

Per EPA's request, Barkley gave an overview of the whole facility processes for the inspection team. Inspectors asked about the gasifier. The facility has determined that it is not a RMP process because there is not a threshold quantity of an RMP chemical (See document 004 in Folder A on the DVD). The facility has two gasifiers. They switch to one when the other goes into maintenance. They are not used at the same time. Barkley stated that there are two nitric acid plants but only one meets threshold quantity. He also stated that some areas of the plant are not subject to PSM/RMP however all areas are treated as PSM/RMP.

At the time of a 2010 EPA RMP inspection, the facility was using chlorine, a RMP chemical. Inspectors learned during the 2015 RMP inspection that chlorine is not used at the facility anymore. CRNF cold lime softens the river water and adds bleach (sodium hypochlorite) to the softened water. Boiler water is treated by reverse osmosis. No oxidizing biocides are used in the boiler system. The circulating cooling tower water is treated with chlorine dioxide for microbiological control. Chlorine dioxide is made on-site on demand through a proprietary process using two bulk non-hazardous chemicals. No chlorine dioxide is stored onsite. It is mixed into the circulating water as it is made.

The facility is covered by OSHA Process Safety Management and has public receptors within their distance to endpoint in the toxic worst case and alternate case offsite consequences analyses for anhydrous ammonia, therefore, it is correctly identified as a Program 3 RMP facility. The listed NAICS code is 325311, Nitrogenous Fertilizer Manufacturing, which is a listed RMP NAICS code.

EPCRA

Whisnant asked if the emergency response procedures had been coordinated with the local planning and response organizations. Barkley stated yes and that the facility's fire chief is on the LEPC. CRNF is required to file a Tier II report each year. Whisnant reviewed their 2014 submittal (Attachment A-7) and asked if the facility had brought any new chemicals over 10,000 lbs or the EPCRA EHS TPQ in the last three years. Neal stated that they had not. In the 2014 report, the maximum daily amount of anhydrous ammonia was 24,945,900 lbs and the average daily amount was 12,912,571 lbs.

HAZARD ASSESSMENT

Whisnant requested the Hazard Assessment conducted for the facility. A notebook was provided with documents that were mostly not dated and it was not clear which documents pertained to the most recent RMP resubmission. Documents 005a-e were scanned (Folder B).

The RMP was resubmitted on August 16, 2013 (Attachment A-6). This was a resubmission, not a correction. A resubmission is an update of all nine sections of the RMP. Therefore, this is the RMP current at the time of the inspection that Whisnant compared to the hazard assessment documentation on file.

The August 16, 2013 RMP current at the time of the inspection, included a toxic worst case scenario (WCS) release of 40,000,000 lbs of anhydrous ammonia from the atmospheric storage tank. Taking into consideration a dike around the tank, the distance to endpoint is 2.9 mile, and the population affected would be 10,000 persons. No environmental receptors were identified. The toxic alternate case scenario (ACS) is a 2,590 lbs/minute release of anhydrous ammonia over 25 minutes from a 4 inch pipe manifold at the pressurized ammonia bullet tanks. This would result in a distance to endpoint of 0.73 miles and affect a population of 1,000 persons. The toxic WCS and ACS offsite consequences analyses used Degadis. The flammable WCS and ACS offsite consequences analyses used EPA's OCA Guidance Reference Tables or Equations. The flammable WCS is a 6,639 lbs release from the Selexol Unit of a flammable mixture in a vapor cloud explosion. The distance to endpoint is 0.12 mile and population affected would be 0. The ACS is a vapor cloud explosion of 2,470 lbs from the Selexol Unit. The distance to endpoint is 0.08 mile and population affected would be 0.

Whisnant reviewed the offsite consequence analyses documentation for the hazard assessment. There was no mention of any possible environmental receptors in the documentation. Data used to estimate environmental receptors should be included in the offsite consequences analyses per 40 CFR 68.39(e). This does not appear to have been evaluated.

The Landview 6 Census 2000 population estimator (document 0005b, bates stamp page 9) gives a total of 9,736 for population based on the location of the atmospheric tank and a radius of 2.90 miles. Document 0005a, bates stamp page 2, states that population figures for the RMP

resubmission on 2/14/12 was from the 2010 census. Bates stamp page 12 is a copy of the City of Coffeyville community profile showing a 2010 Census population of 10,275 for the whole community. See Attachment B-1. The RMP listed a toxic WCS population of 10,000. Whisnant checked this against the Missouri Census Data Center which shows 8,791 for population (Attachment B-2). While CRNF did review and update the population estimate for the WCS, it appears that the estimate may be high. Whisnant shared with the facility representatives during the inspection and the closing conference that there are resources (Marplot and the Missouri Census Data Center) available for free that may give them a better estimate.

Document 0005c, bates stamp page 24, is a Landview 6 Census 2000 population estimator for the toxic ACS. See Attachment B-1. This indicates the population is 938 for a radius of 0.73 mile from the bullet tanks. The 2013 RMP indicated 1,000 for the population estimate. 40 CFR 68.30(d) states that population estimates shall be estimated to two significant digits. The 938 population estimate used before the 2010 census should have reported as 940. There is no documentation of census 2010 population estimates. Whisnant checked the estimate against Marplot and it shows a 2010 population estimate of 620 (Attachment B-3). Whisnant also checked the Missouri Census Data Center, and it shows a 2010 population estimate of 631 (Attachment B-2).

The population estimates for flammable WCS and ACS are based on Landview 6 Census 2000 population estimator. Both show a population estimate of 0 (Attachment B-1).

40 CFR 68.30(c) states that the most recent Census data, or other updated information, shall be used to estimate the population potentially affected by a release. Based on this information, the following deficiency was found:

- 1. Coffeyville Resources Nitrogen Fertilizers, LLC failed to review and update the offsite consequence analyses at least once every 5 years per 40 CFR 68.36. Specifically, failure to update population estimates to 2010 census numbers for the toxic ACS and Flammable WCS & ACS and document evaluation of potential environmental receptors.**

Note: Upon further review of the CRNF Tier II 2014 report after the site visit, it was noted that ammonia is stored in rail cars. A review of the facility records did not show that the facility has evaluated the rail car storage of ammonia as a potential WCS.

PROCESS SAFETY INFORMATION (PSI)

Atmospheric Storage Tank and Ammonia Bullets:

CRNF provided its Process Safety Information Standard EHS-240-02-001, document 0014b (Attachment C-1). This document and other related PSI information can be found in Folder C on the DVD. The PSI Standard addresses the covered processes (Selexol, Urea, Atm. & Bullet

Ammonia Storage, Ammonia Unit, and Ammonia Nitrate) lists maximum intended inventory, provides a description of process chemistry, as well as temperature and pressure operating limits. SDSs, Attachment C-3, on anhydrous ammonia, petroleum coke, urea ammonium nitrate, and urea liquor were also scanned. Consequences of deviation are addressed under operating procedures. Documents related to PSI can be found in Folder C on the DVD.

Other documentation such as materials of construction, relief system design, block flow diagrams, material and energy balances, and P&IDs were on hand and reviewed (reference documents 0014c, 14d, 22, and 24b). Document 0014f, bates page 2 provides locations of water monitors and bates page 3 documents the facility's gas detection system for CO, H₂S, and NH₃.

Although the PSI standard did address electrical classification for the various units, the referenced diagram (D12-0904A) was actually obsolete, having been updated to diagram D01-0002A. Fourteen pages of the PSI standard references the diagram D12-0904 inspectors were told is obsolete.

Document 0012 (Attachment M-1), bates stamp page 9, states that "documentation will be maintained indicating the methods and standards used to ensure that all plant equipment complies with RAGAGEP." Whisnant requested this documentation and was provided document 0026, RAGAGEP Documentation (Attachment C-2). Document 0026 is a letter dated January 2014 referencing the "Plant Equipment Design Compliance with Good Engineering Practices" which listed the design codes and standards utilized by the facility. API 501 and 653 were not referenced in this letter, although document 0017, the Mechanical Integrity Manual (Attachment G-1), bates stamp page 8, states that pressure vessels and tanks will be inspected by persons certified to these standards. In addition, the category of tanks in the RAGAGEP Documentation references ANSI K61.1-1999. Whisnant did notify the facility representatives that in 2014, after their January 2014 letter, ANSI K61.1-1999 was updated to ANSI/CGA G-2.1-2014 that covers the requirements for storage and handling of anhydrous ammonia.

Based on this information, the following deficiency was found:

- 2. Coffeyville Resources Nitrogen Fertilizers, LLC failed to compile current written process safety information per 40 CFR 68.65(a), specifically the PSI standard, document 0014b, references an obsolete electrical classification diagram and the RAGAGEP documentation letter, document 0026, does not include all methods and standards used to ensure that all plant equipment complies with RAGAGEP.**

During the facility tour, on December 10, 2015, it was noted that not all piping carrying anhydrous ammonia was labeled or color coded (ANSI K61.1-1999 Section 5.4.3), and vessels and tanks were not marked with signage specifying "inhalation hazard" (ANSI K61.1-1999 Section 6.6.2). In addition, the anhydrous ammonia vessels lacked suitable barriers to avoid vehicle damage (ANSI K61.1-1999 Section 6.7.1). Photos 15-17 (Attachment N-1) show the ammonia feed tank. Photo 16, Attachment N-1 shows damage to the side of the tank where something has collided with it. ANSI K61.1-1999 Section 5.8.16 states that pressure relief valves shall be replaced no later than five years following the date of its manufacture or last repair date. As noted in the Mechanical Integrity section of this inspection report, ammonia

pressure relief valves are rebuilt on a six year cycle. Based on this information, the following deficiency was found:

3. **Coffeyville Resources Nitrogen Fertilizers, LLC failed to comply with recognized and generally accepted good engineering practices per 40 CFR 68.65(d)(2) specifically anhydrous ammonia piping lacked labeling and color coding, storage vessels lacked signage designating "inhalation hazard," vessels lacked vehicular barriers, and pressure relief valve are not replaced or rebuilt every five years.**

Urea and UAN2 Expansion:

The Urea and UAN Expansion Project (UAN 2 Unit) were evaluated for compliance and the associated PSI information can be found in Folder C on the DVD. SDSs (Attachment C-3) were provided for anhydrous ammonia, urea ammonium nitrate and urea liquor which are produced in this portion of the facility and they detail information on toxicity, permissible exposure limits (PELs), physical data, reactivity data, corrosivity, thermal and chemical stability and hazardous effects of inadvertent mixing.

The major equipment in the Urea plant (Area 10) can be found on bates stamp page 31 and major equipment of the UAN 2 Unit (Area 12B) can be found on bates stamp page 43 of document 0014b (Attachment C-1). Block flow diagrams can be found in document 0020a, process chemistry and electrical classification in section 4.9 of document 0014b for the urea plant and section 4.14 for the UAN #2 facility. The P&IDs can be found in document 0021a beginning on bates stamp page 53, relief systems in document 0014d, material & energy balance information on bates stamp page 2 of document 0020a and design codes and standards employed can be found in document 0026.

Inspectors noted and brought to CRNF's attention that some pumps listed on the UAN Expansion/Nitric Acid Relocation Chart 16LD4410, do not have listed the design temperature, operating temperature, or operating pressures. This information was available in other PSI documents so inspectors did not list it as a deficiency but CRNF may want to update the chart.

PROCESS HAZARD ANALYSIS (PHA)

Two PHAs were selected for review. These included the UAN Expansion Project PHA conducted in June/July 2011 and the Ammonia Synthesis, Storage and Loading System conducted during August 18-21, 2014. This documentation was scanned and can be found in Folder D on the DVD. The UAN PHA used a HAZOP & What-If/Checklist methodology. Team membership had representation from the engineering, operations, safety and maintenance departments. The PHA consisted of eight 'study sections' referred to as 'Nodes'. These nodes addressed controls, siting and human factors. The report's introduction stated that there were no incidents to review due to the urea section being new. The analysis resulted in a number of recommendations that were resolved in a timely manner (Attachment D-1).

The 2014 Ammonia Synthesis, Storage and Loading System PHA used the HAZOP & Checklist methodologies. Team membership included representatives from the operations, engineering, and safety departments. The PHA evaluated 21 areas of Nodes which included controls, siting, human factors, and incidents. The analysis resulted in four recommendations referred to as 'Layers of Protection Analysis' or LOPA. These LOPAs were either completed in a timely manner as scheduled for completion by the end of 2015 (Attachment D-2).

The facility did update and revalidate PHAs every five years and had them available for review during the inspection. Inspectors confirmed that all PHAs were retained for the life of the process.

OPERATING PROCEDURES (SOPs)

CRNF provided documentation regarding its Operating Procedures. This information was scanned and can be found as documents 0019a – k in Folder E on the DVD. Three areas were selected to be examined in depth. These were the Urea Ammonia Nitrate (UAN) plant, the ammonia bullets, and atmospheric storage. The bullets and storage are part of a single process designated as the NH3 plant. Therefore, the procedures reviewed covered two processes, UAN and NH3 plants.

The UAN plant procedures addressed all operating phases with the exception of emergency operations. Sloan and Beaver stated that emergency operations are not conducted at the UAN plant. Although emergency operations are not conducted, it is a required element that must be addressed in the SOPs per 40 CFR 68.69(a)(1)(v). The NH3 plant procedures addressed all phases. Based on this information, the following deficiency was found:

- 4. Coffeyville Resources Nitrogen Fertilizers, LLC failed to address emergency operations in the standard operating procedures per 40 CFR 68.69(a)(1)(v) for the UAN plant.**

PPE in most cases was designated as 'routine.' Facility representatives stated that 'routine' means goggles, FR clothing, hard hat, hearing protection, and safety glasses. PPE was modified on some occasions by the addition of additional safety items such as SCBA. Both plants addressed consequences of deviation. Safety systems were addressed: shut down of the CO2 compressor and NH3 pumps for the UAN plant and emergency isolation valves and warming of the NH3 line to the bullets for the NH3 plant. Process quality control is maintained through lab analyses and one was scanned as a representative example, document 0019a in Folder E.

Document 12 (Attachment M-1), bates stamp page 12, states that SOPs will be certified annually or more frequently as necessary. Inspectors found that the procedures are reviewed annually and certified by the two Operations Coordinators with input from supervisors. The last review was conducted on August 1, 2015. This document was scanned and can be found in Attachment E-1. Employees have access to the procedures electronically by way of the facilities MyCVR home page as well as a hard copy in the control room.

The facility did provide documentation of its safe work policy and procedures regarding lockout/tagout, confined space entry, and line breaking. This information was scanned and can be found in Folder E on the DVD. Contractor entry is addressed separately in this report.

TRAINING – OPERATOR

Each employee hired into a process for the nitrogen facility goes through a one week initial training session where they are introduced to the hazards, safety equipment, procedures, etc. associated with that process. They are then assigned to a mentor in the area where they are exposed to all the requisite skills that comprise the process. As they demonstrate competency of a skill, they are tested and certified for the skill. Moving up the Skills Assessment Certification List for the facility entails not only added responsibility but an increase in salary.

Refresher training is required per their corporate policy. Browning performed a records check of a randomly selected employee to verify that their training procedures meet all the criteria of the Program 3 checklist. During that records check, examples of training records, tests and certifications (from initial hire in 2007 to 10/21/2015) were provided in document 0018a which can be seen in Folder F on the DVD. Specifically the employee had certifications and tests covering ammonia training for 2008, 2011, 2014 and 2015. A Skills Assessment Certification List of employees can also be seen in document 0017c, Attachment F-1.

MECHANICAL INTEGRITY

CRNF provided documentation related to its Mechanical Integrity program and maintenance training which can be found in Folder G on the DVD. The Mechanical Integrity Manual was scanned and can be found in document 0017 (Attachment G-1). The facility uses a time-based inspection strategy and three areas of the process were selected randomly to demonstrate that the facility is in compliance with this policy. The documentation includes the inspection schedules for the ammonia surge tank (V3604) on a six-year cycle, an ammonia bullet vessel (V1) on a 20-year cycle, and pressure relief valves (PRV) on a 6-year cycle. See Attachments G-2 and G-3.

CRNF rebuilds its PRVs and there was a question regarding the PRV cycle and when a valve is removed to be rebuilt. On 10/9/15, Whisnant asked Barkley why they rebuild the PRVs on a six year schedule. Barkley stated that the standard is every five years and because turnaround is every 2 years, they could do it every four or every six and they chose to do it every six. Whisnant then stated that she would have to note it as a deficiency. Later in the inspection, Barkley came back to explain that they follow the API 510 standard which allows for 10 years. On 10/10/15, Barkley stated that the storage and loading area valves can be changed at any time. It doesn't have to be done during a turnaround. Consequently, post inspection, Ford called the manufacturer (Anderson, Greenwood & Co) and it was explained by an engineer that they do not establish when a valve is to be removed, because they do not know the service environment and they leave this to their customers to establish. Document 26, RAGAGEP documentation (Attachment C-2), was provided in response to the inquiry regarding documentation indicating the methods and standards used to ensure that all plant equipment complies with RAGAGEP.

The category of tanks on this document references ANSI K61.1-1999. ANSI K61.1-1999 and the current ANSI standard ANSI/CGA G-2.1-2014 states "a pressure relief valve shall be replaced no later than 5 years following the date of its manufacture or last repair..." Based on this information, the following deficiency was found:

5. **Coffeyville Resources Nitrogen Fertilizers failed to perform inspections and tests on process equipment consistent with good engineering practices per 40 CFR 68.73(d)(3) specifically the pressure relief valves are replaced every six years rather than the required five years as specified in industry standard ANSI/CGA G-2.1-2014.**

CRNF utilizes the MAXIMO software program to schedule preventive maintenance inspections that are in line with the equipment manufacturer's specifications and industry standards. Per our request, the facility provided a corrosion monitoring inspection record conducted in 2015 on one of the three ammonia bullets (11-V-1), reference document 0017g. In addition, visual internal and external inspections and a WFMT (Wet Fluorescent Magnetic Particle) test were conducted in 2012 on the ammonia surge tank (10-V-3604), reference document 0017h. These inspection records be found in Folder G on the DVD.

Maintenance personnel receive training on the processes and equipment. Training subjects include vibration analysis, NDT devices, industrial refrigeration, and rotating equipment to name a few. As maintenance personnel progress in their job, so does their level of training. The progression charts, examples of training sessions and certificates received are included in Folder G, document 0017a. In addition, employees attend numerous off-site training conferences.

The Project Quality Assurance Program was scanned and can be found in document 0017e. The plan assigns responsibilities and ensures subcontractor quality performance as it applies to the proper installation of equipment. A sample requisition form, document 0017d, was scanned to document how the facility assures itself that the correct material is ordered and received.

MANAGEMENT OF CHANGE (MOC) & PRE-STARTUP SAFETY REVIEW (PSSR)

CRNF provided Browning its corporate policy for MOC (Attachment H-1) and PSSR (Attachment H-2). It states that MOC is used for permanent, emergency and temporary changes to process chemicals, equipment, technology, procedures and process equipment to prevent unwanted or unexpected consequences by managing change. The use of MOC does not apply to changes that are replacement-in-kind.

Their policy defines critical action items and non-critical action items and states that critical action items are required to be completed prior to placing the change in service or use and that non-critical items are to be completed prior to MOC closure but may be completed after placing the change in service or use.

Browning reviewed three separate MOCs with each one of them meeting the criteria listed in the Program 3 checklist. Attachment H-3 is document 0030b which is the MOC for the installation

of an ammonia offload line. It followed the corporate policy and utilized the appropriate and relevant forms/checklists (along with supporting documentation) outlined in the policy document.

CRNF's PSSR policy states that it is used to ensure that a new plant, piece of equipment or modification to an existing plant or piece of equipment is ready to operate in a safe manner prior to start up or to being put back into service.

The policy and the completed PSSR reviewed met the criteria listed on the Program 3 checklist, and like the MOC discussed above, utilized the appropriate and relevant forms & checklists to ensure safe operation of the change. The PSSR, document 0030a, for the installation of an ammonia offload line is in Folder H on the DVD.

COMPLIANCE AUDIT

CRNF conducted compliance audits in June 2011 and January 27-30, 2014, document 001, which is in Folder I on the DVD. A portion of the 2014 audit is Attachment I-3. Both audits addressed all required 40 CFR 68 Subpart D elements. Both audits resulted in findings, and these were resolved in a timely manner.

The 2011 compliance audit was conducted by a third party, Spirit Environmental, and team members included PSM and Operation Coordinators and representatives from engineering, maintenance, and operations. See Attachment I-1.

The 2014 audit was led by an unidentified "Corporate based contractor". Audit findings are in Attachment I-2. Team membership consisted of two corporate members, three from the Wynnewood Refinery, and the training coordinator for the Coffeyville Refinery and Fertilizer Plant. It was explained that team members had 20 years of related experience. However, because the team did not include representation from CRNF's engineering, PSM, operations or maintenance departments, the following deficiency was found:

- 6. Coffeyville Resources Nitrogen Fertilizers failed to have at least one person knowledgeable in the process conduct the January 2014 compliance audit per 40 CFR 68.79(b).**

INCIDENT INVESTIGATION

Whisnant requested the last 5 years of OSHA 300 logs. A review of OSHA 300 logs by the inspectors showed no RMP chemical related accidents. As such, the logs were not scanned for the record.

The incident investigation procedure (Attachment J-1) is document number 0015. CRNF investigates incidents resulting in, or with the potential for, catastrophic releases within 48 hours following an incident. The investigation team consists of at least one person knowledgeable in

the process. The investigation reports include the five required components: date of the incident, date the investigation began, incident description, factors contributing to the incident, and recommendations. CRNF has a system to promptly resolve and document resolution of the report findings. Reports are retained for at least five years.

Hess and Whisnant reviewed a list of incidents provided by the facility and identified several for them to provide. Copies of the incidents identified by inspectors were scanned and are in Folder J.

Bates stamp page 16 of the incident investigation procedures states that the Incident Investigation Report shall be distributed to affected employees, contractors affected by the incident, and others. Whisnant reviewed a June 5, 2014 incident, document 0003a, at the Urea unit resulting in a release of 11,865 lbs of anhydrous ammonia. Two contractors were injured. The findings from the 2014 incident were shared with plant employees during their hazwoper refresher course. Whisnant observed the sign in sheet and presentation demonstrating this but did not scan it. Whisnant inquired if CRNF reviewed the 2014 incident findings with the affected contractors. According to Barkley and Warner, the findings were not reviewed with the contractors. Based on this information, the following deficiency was found:

7. Coffeyville Resources Nitrogen Fertilizer, LLC failed to review investigation findings with affected contractors per 40 CFR 68.81(f).

The incident investigation procedure, bates stamp page 5, states that release reporting that is triggered by the flaring of ammonia during a normal startup or shutdown of the UAN plant is not an incident. Bates stamp page 6-7 indicates that incidents are categorized by three levels. RMP incidents are a Level 3, however, Levels 1 & 2 could have injuries and significant damage. Inspectors asked how they determine the incident level. Warner stated that the incident is discussed at the 9:00 am Operations Meeting and using the incident level descriptions, they decide the level of investigation. An incident evaluation spreadsheet, document 0016b, is Attachment J-2. The team consists of all department managers, front line supervisors, and environmental, safety and plant managers.

EMPLOYEE PARTICIPATION

Whisnant requested to see a copy of the employee participation plan. CRNF referred the inspector to document 12 labeled Management System. See Attachment M-1. The employee participation plan is on bates stamp page 6 of the document. The one page plan lists the activities that CRNF will incorporate employee participation including the development of the PHAs. Employees have access to the PHAs on the LAN. Compliance audits and SDSs are also online. Information is also conveyed in safety meetings. Document 12, page 6, under PSI, it states that SDSs are on the company LAN and can be accessed by all employees at any time using MSDS Online.

Whisnant confirmed employee participation by asking operators in the control room. They confirmed that an operator and engineer are always involved in the PHA. An operator pulled up access to PHAs, the 2014 compliance audit, and SDSs on his computer.

HOT WORK PERMIT

CRNF provided Browning their documentation for Hot Work Permits. They explained that it had recently been revised. The system currently in use has a revision date of 6/18/2014. The latest revised system, SAF-200-08-147 Revision 7 with an issue date of 03/09/2015 is to be implemented after the first of the year, 2016. Both versions of the Hot Works Permits which were reviewed by Browning, but not scanned, met all the checklist criteria.

The purpose for the revised Hot Work Permit was to provide enhanced definition for such topics as Safe Work, Hot Work, and Open Flame/Spark Producing. The issuer of the form must check one of these three boxes, located on the top of the form, along with completion of the rest of the form for it to be completed successfully.

Hot work permits are to be issued for a 12 hour period which equates to one work shift. If the job cannot be completed during that shift a second hot work permit will be issued by a new issuer. The first permit is kept on file until the job is complete at which time both hot work permits will be scanned and kept on file for future reference.

Inspectors were able to witness the hot work permit process during the inspection. Ford was issued a hot work permit for an area where some of the photographs were taken during the site tour.

CONTRACTOR

CRNF has a program regarding contractor safety performance. Documents collected regarding the contractor program can be found in Folder K on the DVD. Their Contractor Safety Exhibits and Procedures Manual, document 0010a, was scanned and can be found in Attachment K-1. Before a contractor can begin work they must sign a Master Services Agreement (MSA) which in addition to a number of other items requires the contractor to comply with CRNF's rules on health and safety. Contractors are required to complete a Pre-Qualification Form (PQF) that addresses their safety and health performance, substance program, and training records. In addition, they must complete a form identifying any hazardous material being brought on site. Contractors are required to attend an orientation that includes a 35-minute video followed by a test. The video covers PPE, flammable and toxic hazards, movement, and emergency response. They must answer correctly 80% of the test questions to pass.

Two contractors were selected at random and their PQFs reviewed. The contractors were Copperhead Industries and Master Contracting Services. These PQFs (documents 0010c & d) were scanned and can be found in Attachment K-2 and K-3. Regarding training records the form states "attach summary of Employees and Training performed". However, in both cases CRNF

was not able to produce any summaries that may have been included along with the completed PQF despite each contractor indicating on the form that training was conducted. Based on this information, the following deficiency was found:

8. Coffeyville Resources Nitrogen Fertilizers failed to require contractors to document employee I.D., date of training, and means to verify training was understood per 40 CFR 68.87(c)(3).

EMERGENCY RESPONSE

CRNF provided a document titled Facility Response Plan (FRP), document 0011, signed by the VP & Fertilizer Manager on October 16, 2015 (Attachment L-2). At EPA's request post inspection, the facility sent its Integrated Contingency Plan (ICP), document 0011g (Attachment L-2). Emergency response personnel training documentation (documents 0011a-f) also was provided and can be found in Folder L on the DVD.

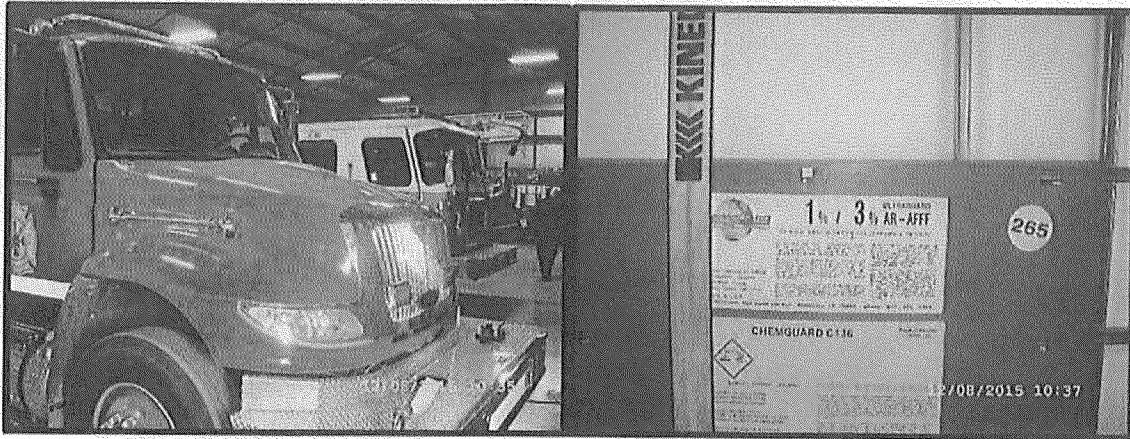
The facility will respond to an incident with their own personnel and equipment to onsite emergencies. The emergency response team consists of ten dedicated and forty volunteer employees. This team consists four captains, five lieutenants, three assistant chiefs and the volunteers that are comprised of mainly maintenance employees and operators of both the facility and the neighboring refinery. The team is notified by way of a paging system if they are required to respond to an emergency. New members of the team receive 40-hours of HAZWOPER training and refresher training conducted continuously afterward. The facility has mutual aid agreements with the Coffeyville and Montgomery fire departments as well as with the Nowata City and Nowata County fire departments in the neighboring state of Oklahoma. Training exercises are conducted once or twice a year with local first responders. Means of communication include landline, cell phones, and 2-way radios. Employees, as well as the surrounding community, also can be notified of emergencies by way of sirens. There are procedures addressing the notification of local radio stations and cable television in the event of an emergency. Contact numbers are included for a number of organizations including the NRC, SERC, and LEPC.

The ICP details three incident levels and provides examples of each. It addresses the functions of the initial On-Scene Incident Commander, response procedures and the incident command system which includes a number of 'Attack Teams' made up of fire, hazmat, rescue and emergency medical.

The facility has a First Aid Station and a nurse on staff. According to the FRP, first aid will be administered by this person or another certified individual. It states that the emergency care and first aid procedure are kept at the aid station and briefly describes that the procedure includes assessing the airway, controlling bleeding, treatment for shock and evacuation to the local hospital. Because the first aid procedure in the FRP is not more specific such as how to respond to an ammonia inhalation or an ammonia burn, the following deficiency was found:

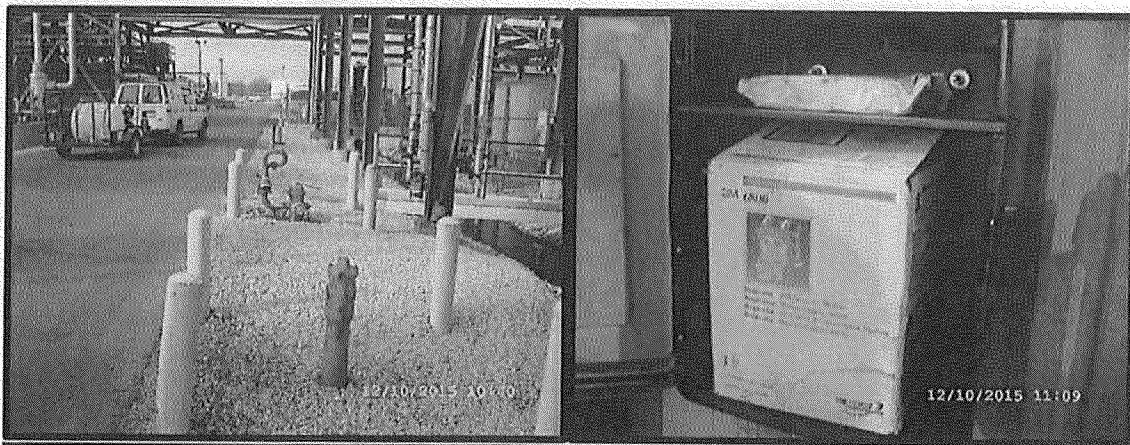
9. Coffeyville Resources Nitrogen Fertilizers failed to include documentation of proper first-aid and emergency medical treatment necessary to treat accidental human exposures in the emergency response plan per 40 CFR 68.95(a)(1)(ii).

The following are a representative sample of photos taken the during the emergency response portion of the facility tour on December 8, 2015. Photos were taken of emergency response equipment. The complete set of photos and document 0037, a camera document log, can be found in Folder N on the DVD.



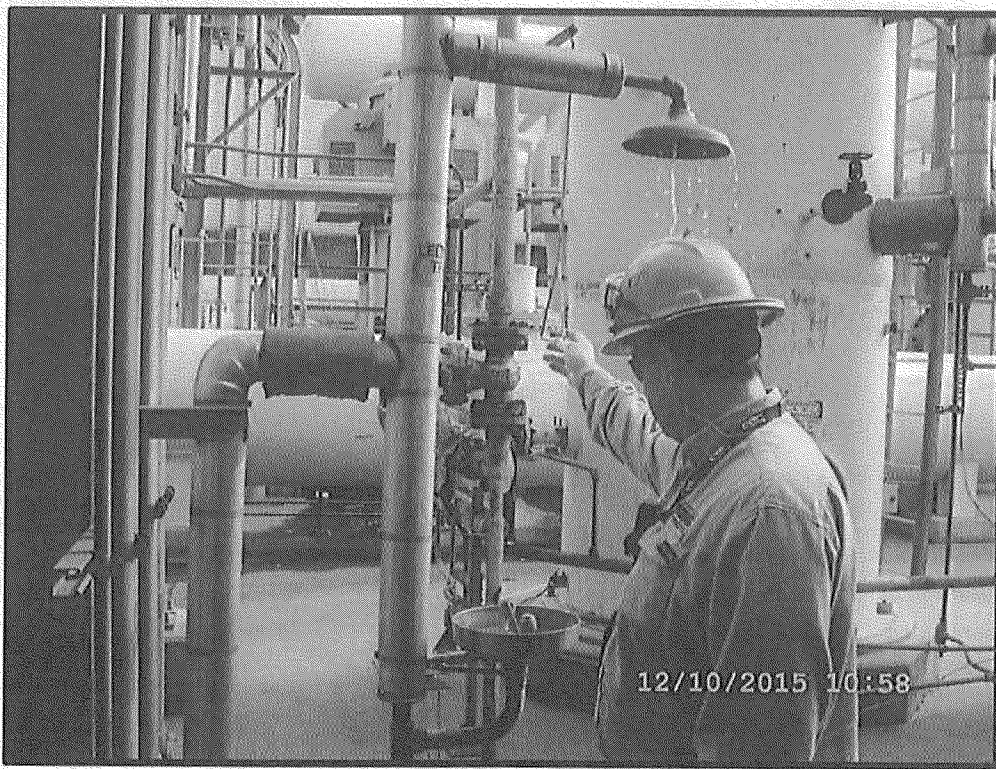
Fire fighting vehicles

Foam Totes

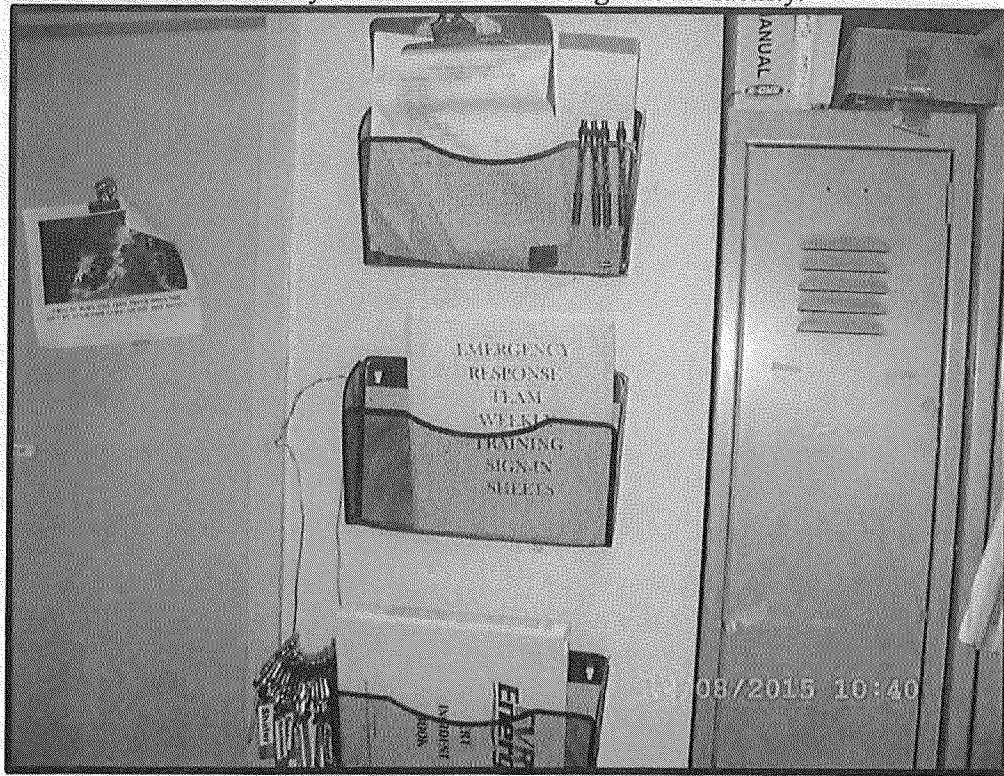


Fire Suppression Monitors

Respirators



One of a number of safety showers located throughout the facility.



MANAGEMENT SYSTEM

Whisnant inquired about CRNF's management system to oversee the implementation of the risk management program elements. CRNF provided their management system which can be found on bates stamp pages 4-5 of scanned document 12 (Attachment M-1). Overall responsibility for the RMP is the Vice President and Fertilizer Facility Manager. These two position titles refer to the same person. The management system outlines responsibilities for each of the program elements by position title. The facility has assigned a qualified position that has overall responsibility for development and implementation of the RMP elements. The RMP implementation responsibilities are clearly identified in the document for each position. Lines of authority are delineated as well.

The management system standard scanned was not signed as approved. A signed version was available upon request.

Additionally, in reviewing document 12, section 3.1, Whisnant noted that the section lists regulated substances in each process. The list does not include hydrogen sulfide for the selexol unit which is listed in the RMP. This was noted for CRNF so that they can amend the section.

RISK MANAGEMENT PLAN

CRNF did touch on all six elements of the Executive Summary criteria in their August 2013 RMP resubmittal. They met the requirements for the following Subpart G parameters; Registration, Five-year Accident History, Section 7 (Prevention Program/Program 3) and Section 9 requirements (Emergency Response Program), Updates and Required Corrections as needed for a complete and accurate RMP.

However, they failed to review and update the population estimates and public receptor information as required every five years per 40 CFR 68.36, and this is noted by deficiency number one in the hazard assessment section of this report.

CLOSING CONFERENCE

On Friday, December 11, 2015, Whisnant gave Barkley the option of holding the closing conference before he needed to leave early that day. Inspectors were still waiting on some requested documents to be provided for their review. Barkley opted to have the conference before he left. At the closing conference, Whisnant reviewed the team's observations and preliminary findings with the facility representatives and noted again that the documents which we were waiting on that day and a post inspection review of documents might reveal other findings. Whisnant also clarified that the RMP Inspection was not an audit. The cover sheets the CRNF put on the documents provided to inspectors lists the visit as an audit. Inspectors made sure that CRNF knew that an audit and inspection are different.

Barkley signed and the Confidential Business Information forms (Attachment A-3). Because documents and photos were being claimed as CBI, Whisnant also left a copy of Attachment 1 Notice and Opportunity to Substantiate Confidential Business Information Claim Letter indicating how to substantiate the CBI and that substantiation was to be due on January 5, 2016. The EPA policy regarding CBI was explained again to facility representatives. Whisnant provided Barkley with a copy of the signed forms.

Inspectors then returned to the classroom conference table to complete the inspection. Irwin signed the Notice of Preliminary Findings (Attachment A-4) and the Receipt for Samples and Documents (Attachment A-2) once the site visit was complete. Two items were added to the Receipt for Documents to be sent to the EPA by 12/16/15. (This information was provided post inspection on 12/16/15 via hand delivery to the EPA Region 7 offices.) Whisnant provided Irwin with a copy of each of the signed inspection forms. EPA copied the contents of their thumb drive to a facility provided thumb drive containing all documents scanned and photos taken during the inspection. Irwin verified that all documents transferred to his copy. The team departed the facility at 3:20 pm on Friday, December 11, 2015.

POST INSPECTION LETTER

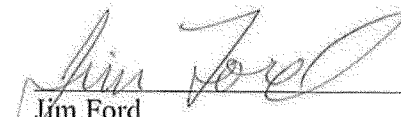
On December 21, 2015, Whisnant received a letter transmitted via email in which CRNF responded to each of the preliminary findings communicated in the closing meeting. This information will be included in the case folder and scanned onto the DVD.



Amber Whisnant
Compliance Inspector



David Browning
Compliance Inspector


Jim Ford
Compliance Inspector

ATTACHMENTS – COFFEYVILLE RESOURCES NITROGEN FERTILIZERS, LLC

A. General Inspection Information

- A-1 – Notice of Inspection
- A-2 – Receipt for Samples and Documents
- A-3 – Confidentiality Notice
- A-4 – Notice of Preliminary Findings
- A-5 – Google Earth Pro Maps
- A-6 – Risk Management Plan
- A-7 – Tier II 2014

B. Hazard Assessment

- B-1 – OCA, doc 0005a-e
- B-2 – 2010 Census Data from CAPS
- B-3 – 2010 Census Data from Marplot

C. Process Safety Information

- C-1 – PSI Procedure, doc 0014b
- C-2 – RAGAGEP Documentation, doc 0026
- C-3 – SDS, doc 0014a

D. Process Hazard Analysis

- D-1 – 2011 UAN PHA Recommendation tracking all 8 nodes, doc 0021c
- D-2 – 2014 Ammonia Synthesis PHA Open & Closed PHA Recommendations Report, doc 0023b

E. Standard Operating Procedures

- E-1 – SOP Certification, doc 0019a

F. Training – Operator

- F-1 – NCCER Skills assessment certification list, doc 0017c

G. Mechanical Integrity

- G-1 – Mechanical Integrity Manual, doc 0017
- G-2 – PSV Test Frequency Chart, doc 0036
- G-3 – Documented frequency of inspections & testing and specific schedule for V3604 & V1 bullet, doc 0017f

H. Management of Change & Pre-Startup Safety Review

- H-1 – Management of Change Procedure, doc 0007
- H-2 – Pre-Startup Safety Review procedure, doc 0006
- H-3 – MOC and PSSR assorted documentation with EPA comments in red, doc 0030b

I. Compliance Audit

- I-1 – Compliance Audit Recommendation Tracking for 2011, doc 0013a
- I-2 – Compliance Audit Recommendation Tracking for 2014, doc 0013b
- I-3 – Compliance Audit 2014, doc 001

J. Incident Investigation

- J-1 – Incident Investigation Procedure, doc 0015
- J-2 – Incident Evaluation spreadsheet, doc 0016b

K. Contractors

- K-1 – Contractor Safety Exhibits and Procedures Manual, doc 0010a
- K-2 – Contractor Hazard Communication Statement, doc 0010c
- K-3 – Contractor Hazard Communication Statement, doc 0010d

L. Emergency Response Plan

- L-1 – Emergency Response Program, doc 0011
- L-2 – Integrated Contingency Plan, doc 0011g

M. Management System & Employee Participation

- M-1 – Management System, doc 0012

N. Photo Log

- N-1 – Photo Log

O. DVD

Attachments that have a claim of CBI will reside on the DVD and not put into the case file. DVD will be maintained as CBI.